

What need is the ATC addressing?

Testing for distributed simulation environments is usually a two step process: models are first tested individually based on the system design, followed by their integration into the larger system.

Functional testing of model components is essential for the success of the simulation achieving its goals. Functional tests ensure the models adhere to the interface specification defined in the system design.

Testing models individually, however is difficult due to the need to provide the appropriate stimuli in the correct order and circumstance. Additionally, data dependencies grow quickly and the circular dependencies force developers to test the system as a whole thereby skipping individual model testing.

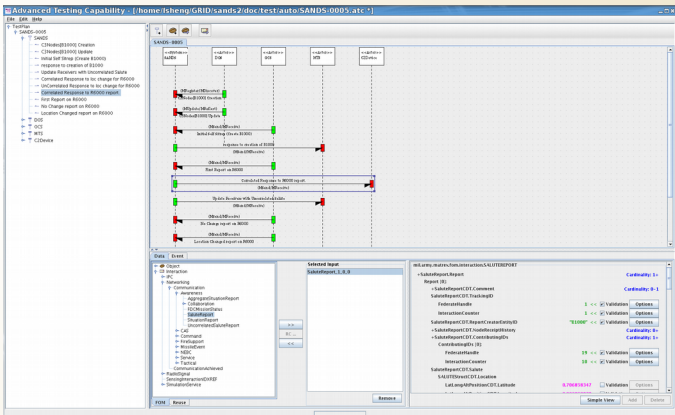
Problems in systems integration arise because models are not tested for their adherence to system design before being integrated into the whole distributed simulation environment.

To address the difficulties of model testing in accordance with the system design, MATREX has an Advanced Testing Capability (ATC) application to facilitate functional testing of models (black-box testing).

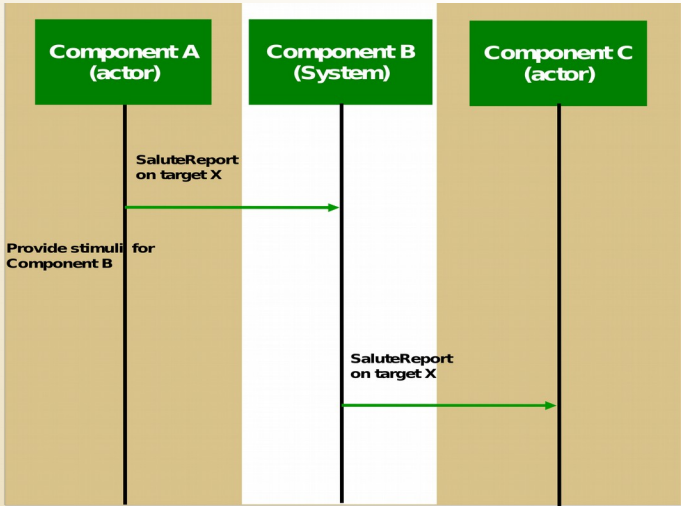
How is the ATC addressing this need?

The primary purpose of ATC is to provide model developers the capability to perform meaningful and repeatable “black box” on individual components build on the MATREX tools.

Through an advanced graphical user interface (GUI) the user is allowed to graphically define tests that may be saved and recalled at a later time or sent to other users. thus, ATC also performs the function of documenting specific test cases in order to provide reproducibility. this allows for automation, and thus, regression testing becomes much easier.



The ATC allows the users to graphically create a sequence of actions or events to stimulate the system under test. The system responses generated by actor actions are validated.



The ATC generates source code, which is then run to execute the test and verify results.

**Who is benefiting from the ATC Tool?**

Research, Development and Engineering Command

- AMRDEC
- ARDEC
- ARL
- CERDEC (Fort Belvoir and Fort Monmouth)
- NSRDEC
- STTC
- TARDEC

Future Combat System Lead System Integrator

Various Other TRADOC and ATEC Customers

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Benefits (Why) of using the ATC Tool?

- Provides users the capability to build, store and execute test for components built on the MATREX tools
- Provides the capability to perform meaningful and repeatable black-box testing on an individual components build on the MATREX tools
- Allows developers to test their individual components without having to bring up the entire federation, making debugging easier and lower the cost of testing
- Allows the Integration and Test team to debug issues during integration
- Can be used as an acceptance test for new and updated components

Where can an individual use the ATC?

- Laboratory Development and Testing Environments (both Distributed and non-Distributed Networks)
- Standalone Desktop Configuration
- Standalone Test Configuration

Get the right M&S technology to the right place, at the right time, for the Decision Maker and the Warfighter.

Acronyms List

AMRDEC = Aviation & Missile Research, Development and Engineering Center

ARDEC = Armament Research, Development and Engineering Center

ARL = Army Research Laboratory

ATC = Advanced Testing Capability

ATEC = Army Test and Evaluation Command

CERDEC = Communications-Electronics Research, Development and Engineering Center

FCS = Future Combat System

GUI = Graphical User Interface

LSI = Lead System Integrator

MATREX = Modeling Architecture for Technology, Research and Experimentation

NSRDEC = Natick Soldier Research, Development and Engineering Center

STTC = Simulation & Training Technology Center

TARDEC = Tank and Automotive Research, Development and Engineering Center

TRADOC = Training and Doctrine Command